

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	10/820188	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:10
S2	4199424	@ad<="20030407"	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 12:15
S3	1372	(422/234,187 or 429/19).ccls. and S2	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 12:25
S4	437	reformer and hydrogen and oxygen and S3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:02
S5	1	circulator and separator and S4	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:13
S6	10	S2 and circulator and reformer and hydrogen and oxygen and separator and enrich\$4	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 15:43
S7	15	enrichment device and S2 and reformer	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 15:46
S8	53	(thomas beckman or christian duelk or arnold lamm or thomas poschmann or jochen schaefer).in.	US-PGPUB; USPAT; USOCR	NEAR	ON	2007/07/12 16:10
S9	33	(thomas beckman or christian duelk or arnold lamm or thomas poschmann or jochen schaefer).in. and S2	US-PGPUB; USPAT; USOCR	NEAR	ON	2007/07/16 11:29
S10	58	S6 or S7 or S9	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 16:48
S11	0	S10 and permeable with hydrogen with diaphragm	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 16:51
S12	6	S10 and permeable with hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/12 16:51
S13	4199424	@ad<="20030407"	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:02
S14	1372	(422/234,187 or 429/19).ccls. and S13	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:02

## EAST Search History

S15	137	S14 and (recirulat\$3 or circulat\$3) and reformer and separat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:39
S16	43	S15 and enrich\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:03
S17	11	S15 and enrichment	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:03
S18	8	S15 and diaphragm	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:06
S19	81	S13 and diaphragm with permeable with hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:07
S20	0	S13 and diaphragm with permeable with hydrogen and reformer	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:07
S21	7	S13 and diaphragm with permeable with hydrogen and fuel cell	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 10:07
S22	1	("6332913").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/16 10:10
S23	4	(US-20020085963-\$).did. or (US-4681745-\$ or US-6106963-\$ or US-6332913-\$).did.	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:11
S24	3	S23 and pump	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:13
S25	1	("20030168263").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/16 10:13
S26	5	(US-20020085963-\$ or US-20030168263-\$).did. or (US-4681745-\$ or US-6106963-\$ or US-6332913-\$).did.	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:13
S27	4	S26 and pump	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:15
S28	4	S26 and steam	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:15
S29	0	S26 and autothermal	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:16
S30	1	10/820188	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:29
S31	1	S30 and autothermal	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:17

## EAST Search History

S32	674	autothermal reformer	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:17
S33	64	autothermal reformer.ab.	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:22
S34	48	autothermal reformer and S13 and recirculat\$3 and separat\$3	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:35
S35	48	95/55.ccls. and reformer	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:36
S36	21	95/55.ccls. and reformer and separat\$3 and recirculat\$3	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:36
S37	20	95/55.ccls. and reformer and separat\$3 and recirculat\$3 and S13	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:38
S38	56	"95".clas. and reformer and separat\$3 and recirculat\$3 and S13	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:38
S39	36	"95".clas. and reformer and separat\$3 and recirculat\$3 and S13 not S37	US-PGPUB; USPAT	ADJ	ON	2007/07/16 10:38
S40	6	09/294679	US-PGPUB; USPAT; USOCR	NEAR	ON	2007/07/16 11:30
S41	1	("6609582").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/16 11:31
S42	1	("20020085963").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/16 11:59
S43	1	("20030168263").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/16 12:00
S44	13	(US-20020085963-\$ or US-20030168263-\$).did. or (US-4681745-\$ or US-6106963-\$ or US-6332913-\$ or US-4836833-\$ or US-6159272-\$ or US-6759153-\$ or US-6551731-\$ or US-6521366-\$ or US-6423435-\$ or US-6311650-\$ or US-5981096-\$).did.	US-PGPUB; USPAT	ADJ	ON	2007/07/16 12:00
S45	8	S44 and separat\$3 with hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:11
S46	1	"20020085963".pn. and separat\$3 with hydrogen and circulat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:11
S47	8	S44 and circulat\$4	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:30

## EAST Search History

S48	99	("48" or "429" or "422" or "73" or "436" or "95").clas. and S13 and reformer and fuel cell and (separator or separation unit) and (circulat\$3 or recirculat\$3) with hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:42
S49	19	("48" or "429" or "422" or "73" or "436" or "95").clas. and S13 and reformer.ab. and fuel cell and (separator or separation unit) and (circulat\$3 or recirculat\$3) with hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/16 12:43
S50	14	(US-20020085963-\$ or US-20030168263-\$).did. or (US-6521366-\$ or US-6106963-\$ or US-4681745-\$ or US-6332913-\$ or US-4836833-\$ or US-6159272-\$ or US-6759153-\$ or US-6551731-\$ or US-6311650-\$ or US-5981096-\$ or US-6423435-\$ or US-6893755-\$). did.	US-PGPUB; USPAT	ADJ	ON	2007/07/24 15:24
S51	10	S50 and fuel cell	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:29
S52	628	429/247.ccls.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:30
S53	4200828	@ad<="20030407"	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:30
S54	292	429/247.ccls. and S53	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:31
S55	29	S54 and (recirculat\$3 or circulat\$3)	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:34
S56	68278	"431".clas.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:34
S57	52040	"429".clas.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:46
S58	99114	"422".clas.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:46
S59	670691	circulat\$3 or recirculat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:51

## EAST Search History

S60	2470	S56 and S53 and S59	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:52
S61	21	S60 and reformer and separate	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:55
S62	0	S60 and reformer and separator not S61	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:56
S63	503	S53 and S57 and S59 and reformer and separate	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:50
S64	147	S53 and S58 and S59 and reformer and separate	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:10
S65	189	S60 and separator not S61	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 15:56
S66	2	egr with reformer and (S56 or S57 or S58)	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:14
S67	96	egr and (S56 or S57 or S58) and S53	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:20
S68	2	egr with reformer and S53 not S66	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:22
S69	896	egr.ab. and S53	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:23
S70	0	(egr and reformer).ab. and S53	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:23
S71	0	(egr).ab. and S53 and reformer	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:23
S72	14	egr.ab. and S53 and separator	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:26
S73	3	(enrichment device or enricher) with hydrogen and S53 and (S56 or S57 or S58)	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:27

## EAST Search History

S74	15	(US-20020085963-\$ or US-20030168263-\$ or US-20070065688-\$).did. or (US-6521366-\$ or US-6106963-\$ or US-4681745-\$ or US-6332913-\$ or US-4836833-\$ or US-6159272-\$ or US-6759153-\$ or US-6551731-\$ or US-6311650-\$ or US-5981096-\$ or US-6423435-\$ or US-6893755-\$). did.	US-PGPUB; USPAT	ADJ	ON	2007/07/24 16:28
S75	8	enrich\$4 and S74	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:29
S76	5	enrich\$4 with hydrogen and S74	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:29
S77	24	diaphragm and S63	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 16:58
S78	8	diaphragm with hydrogen and S63	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 17:03
S79	17	gas pump and S63	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 17:05
S80	88	autothermal and S63	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 17:05
S81	46	autothermal reformer and S63	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/24 17:05
S82	6	09/294679	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:48
S83	20	(US-20030168263-\$ or US-20020085963-\$ or US-20030008186-\$ or US-20030138681-\$ or US-20070065688-\$ or US-20030143441-\$).did. or (US-6551731-\$ or US-6893755-\$ or US-6759153-\$ or US-6423435-\$ or US-6521366-\$ or US-6332913-\$ or US-6311650-\$ or US-6159272-\$ or US-6106963-\$ or US-4681745-\$ or US-5981096-\$ or US-4836833-\$ or US-7045229-\$ or US-6609582-\$). did.	US-PGPUB; USPAT	ADJ	ON	2007/07/25 09:50

## EAST Search History

S84	4200828	@ad<="20030407"	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:50
S85	52040	"429".clas.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:50
S86	670691	circulat\$3 or recirculat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:50
S87	503	S84 and S85 and S86 and reformer and separate	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:50
S88	2	S83 and hydrogen enrichment	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 10:39
S89	0	S87 and hydrogen enrichment device	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:57
S90	1	("4461224").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/25 09:57
S91	0	S90 and diaphragm	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 09:58
S92	1	10/820188	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 13:42
S93	0	S90 and pump	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 10:01
S94	1	S90 and steam	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 10:21
S95	1	("20020085963").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/25 10:31
S96	1	("20030168263").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/25 10:31
S97	15	(S83 or S87) and enrich\$4 device	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 10:51
S98	8	(S83 or S87) and diaphragm with hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 11:08
S99	46	(S83 or S87) and autothermal reformer	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 11:12

## EAST Search History

S10 0	38	(S83 or S87) and autothermal reformer and (circulat\$3 or recirculat\$3) same hydrogen	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 11:14
S10 1	16	(S83 or S87) and autothermal reformer and (circulat\$3 or recirculat\$3) same hydrogen same separat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 11:14
S10 2	11	(S83 or S87) and autothermal reformer and (circulat\$3 or recirculat\$3) with hydrogen same separat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 13:31
S10 3	1	("20040142215").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/25 13:31
S10 4	2	shift stage and S87	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 13:48
S10 5	2	shift stage and S87 and enrich\$4	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 13:51
S10 6	1	("6063515").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/25 13:52
S10 7	1	("4461224").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/25 13:52
S10 8	4	("4461224").URPN.	USPAT	ADJ	ON	2007/07/25 13:52
S10 9	10	("2800172"   "3287902"   "3837820"   "4331638").PN. OR ("4461224").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/25 13:52
S11 0	1	10/820188	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:17
S11 1	1	("6332913").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/26 10:20
S11 2	380	(membrane with gas separation). ab.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:18
S11 3	19	(membrane with gas separation). ab. and reformer	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:18
S11 4	3	((("4461224") or ("20020085963") or ("20040142215"))).PN.	US-PGPUB; USPAT	OR	OFF	2007/07/26 10:20
S11 5	2	membrane and S114	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:25
S11 6	1	("20030170514").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/26 10:25



## EAST Search History

S11 7	21	(US-20030168263-\$ or US-20070065688-\$ or US-20030143441-\$ or US-20030138681-\$ or US-20030008186-\$ or US-20020085963-\$).did. or (US-6609582-\$ or US-7045229-\$ or US-6551731-\$ or US-6893755-\$ or US-6759153-\$ or US-6423435-\$ or US-6521366-\$ or US-6311650-\$ or US-6332913-\$ or US-6106963-\$ or US-6159272-\$ or US-4836833-\$ or US-5981096-\$ or US-4681745-\$ or US-6063515-\$).did.	US-PGPUB; USPAT	ADJ	ON	2007/07/26 10:28
S11 8	1	S117 and autothermal reformer	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:29
S11 9	8	(gasoline or diesel) and S117	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:31
S12 0	5	auxiliary and S117	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:52
S12 1	1	auxiliary power and S117	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:32
S12 2	1	("20030008186").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/26 10:57
S12 3	4200845	@ad<="20030407"	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:57
S12 4	52080	"429".clas.	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:57
S12 5	671223	circulat\$3 or recirculat\$3	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:57
S12 6	503	S123 and S124 and S125 and reformer and separate	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:57
S12 7	23	S126 and auxiliary power	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:58
S12 8	10	S126 and auxiliary power unit	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 10:58
S12 9	9	S126 and auxiliary power unit and (vehicle or automobile)	US-PGPUB; USPAT; USOCR	ADJ	ON	2007/07/26 12:00

## EAST Search History

S13 0	1	("20030170514").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/26 12:06
S13 1	1	("7041272").PN.	US-PGPUB; USPAT	OR	OFF	2007/07/26 12:06
S13 2	1	("20020098394").PN.	US-PGPUB; USPAT	OR	OFF	2007/08/03 12:43
S13 3	23	(US-20030138681-\$ or US-20070065688-\$ or US-20030168263-\$ or US-20020085963-\$ or US-20030008186-\$ or US-20030170514-\$ or US-20030143441-\$).did. or (US-7045229-\$ or US-7041272-\$ or US-6106963-\$ or US-6609582-\$ or US-6759153-\$ or US-6159272-\$ or US-4681745-\$ or US-6311650-\$ or US-6063515-\$ or US-4836833-\$ or US-6521366-\$ or US-6423435-\$ or US-6551731-\$ or US-6893755-\$ or US-6332913-\$ or US-5981096-\$). did.	US-PGPUB; USPAT	ADJ	ON	2008/01/26 11:43